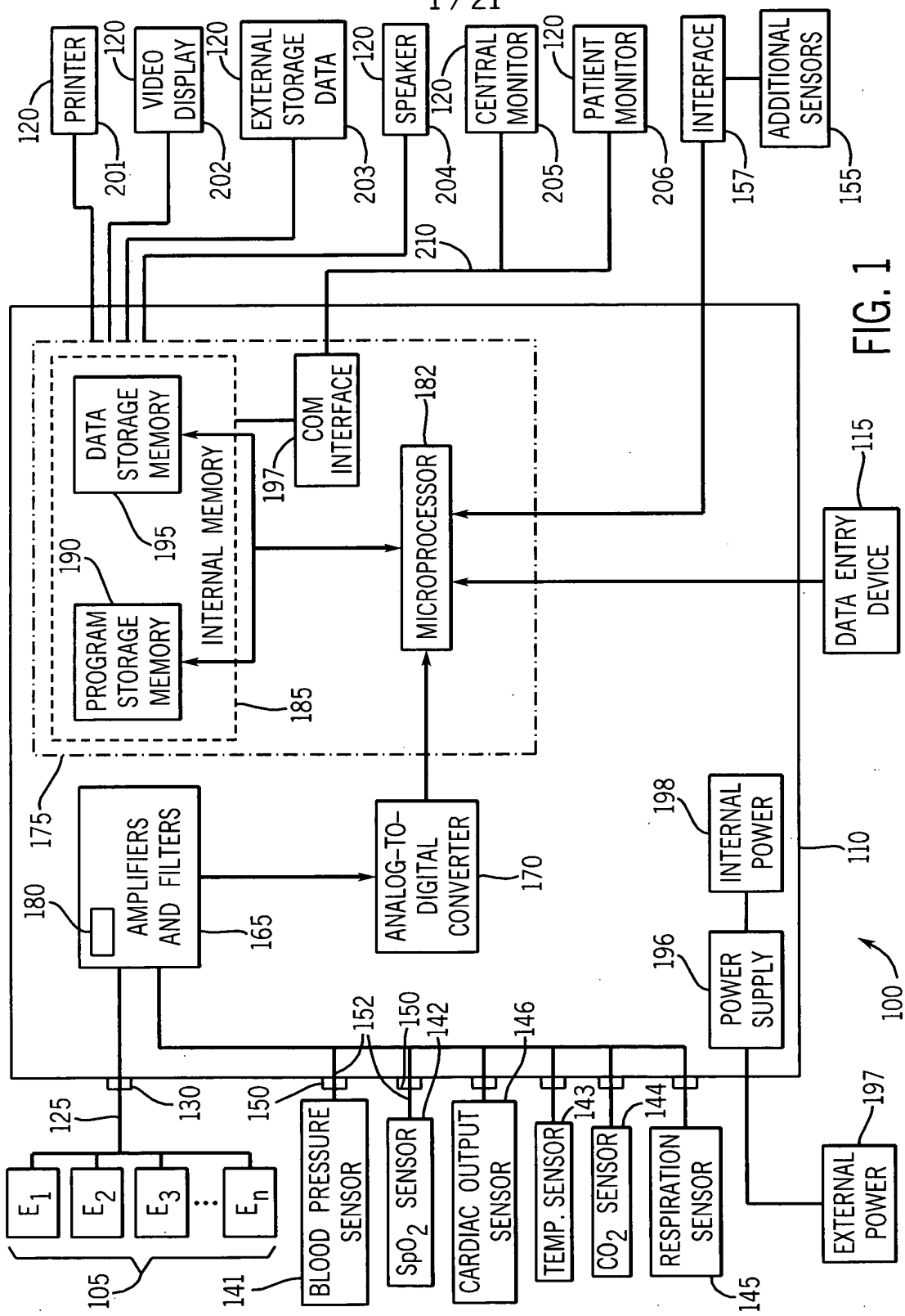
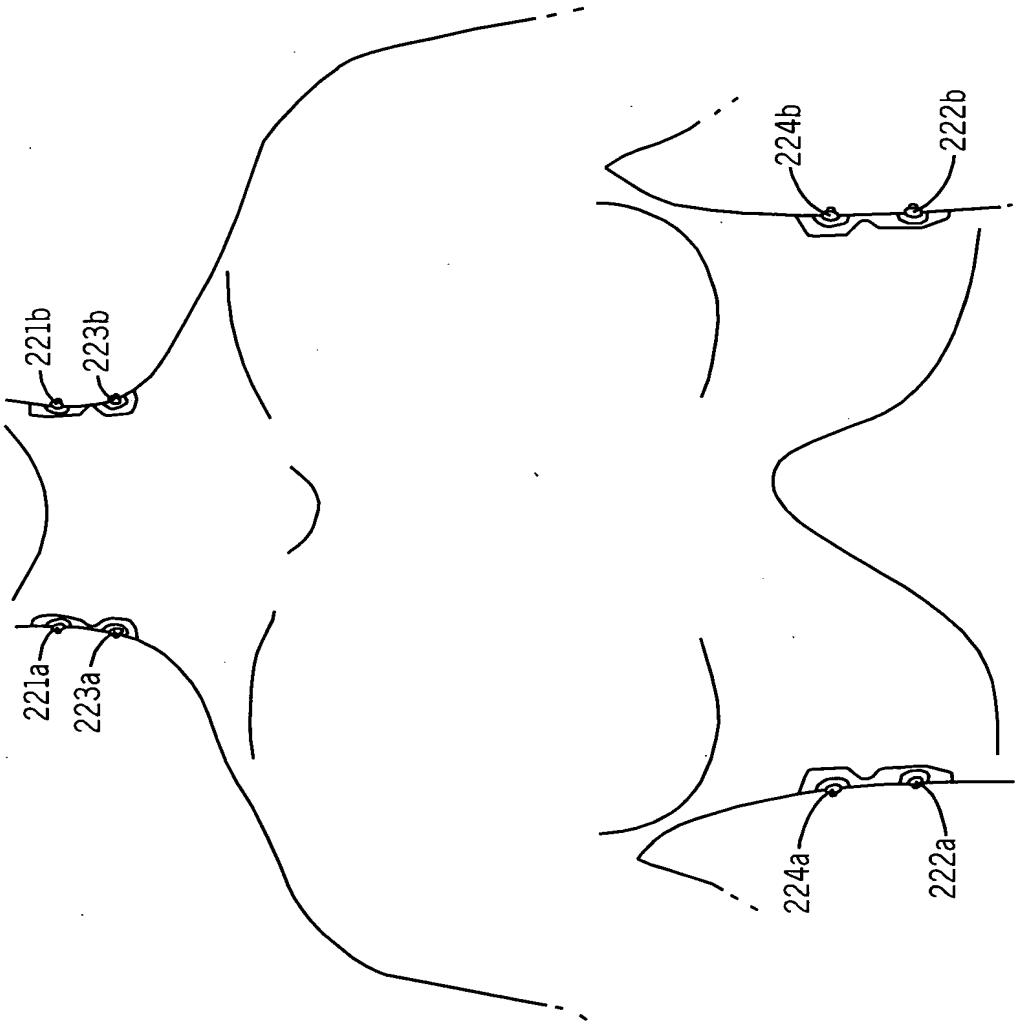

PRINTER
VIDEO DISPLAY
EXTERNAL STORAGE DATA
SPEAKER
CENTRAL MONITOR
PATIENT MONITOR
INTERFACE
ADDITIONAL SENSORS
120
201
202
203
204
205
206
157
155
210
DATA STORAGE MEMORY
COM INTERFACE
INTERNAL MEMORY
PROGRAM STORAGE MEMORY
MICROPROCESSOR
DATA ENTRY DEVICE
182
115
190
195
197
185
175
AMPLIFIERS AND FILTERS
ANALOG-TO-DIGITAL CONVERTER
INTERNAL POWER
POWER SUPPLY
EXTERNAL POWER
180
165
170
198
110
196
100
152
150
142
146
125
130
143
144
145
141
105
E_1
E_2
E_3
E_n
BLOOD PRESSURE SENSOR
SpO_2 SENSOR
CARDIAC OUTPUT SENSOR
TEMP. SENSOR
CO_2 SENSOR
RESPIRATION SENSOR

FIG. 1

FIG. 2



Docket Technet

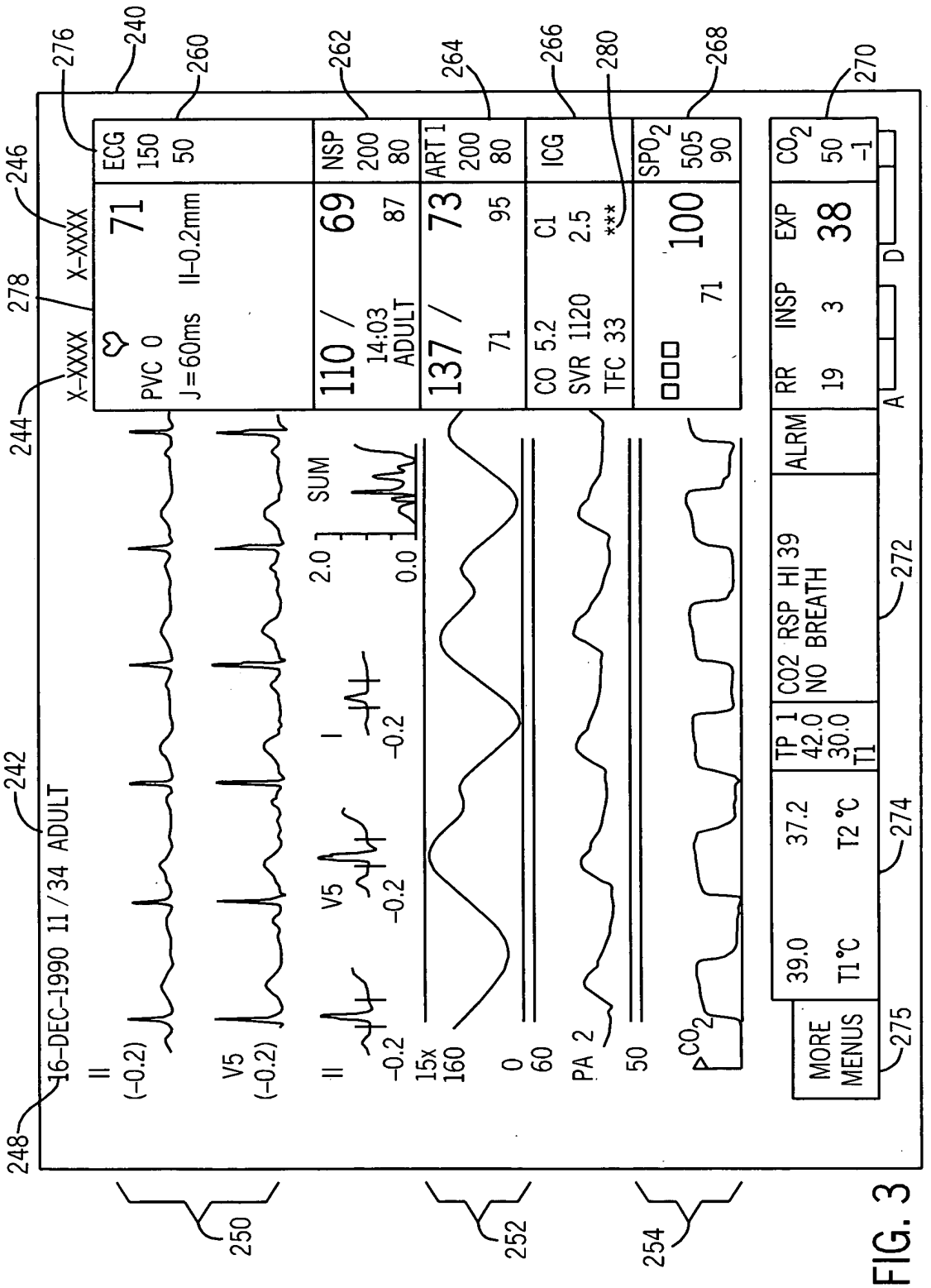

276
240
260
262
264
266
280
268
270
246
278
244
242
248
250
252
254
ECG 150 50
NSP 200 80
ART1 200 80
ICG
SPO2 505 90
CO2 50 -1
X-XXXX
X-XXXX
71
PVC 0
J=60ms II-0.2mm
110 / 69
14:03 87
ADULT
137 / 73
71 95
CO 5.2 C1
SVR 1120 2.5
TFC 33 ***
100
71
RR INSP EXP
19 3 38
A D
16-DEC-1990 11/34 ADULT
II (-0.2)
V5 (-0.2)
II -0.2
15x 160
PA 2
50
SUM
2.0
0.0
V5 -0.2
I -0.2
0
60
CO2
MORE MENUS
39.0 37.2
T1°C T2°C
TP 1 42.0 30.0 T1
CO2 RSP HI 39
NO BREATH
ALRM

FIG. 3

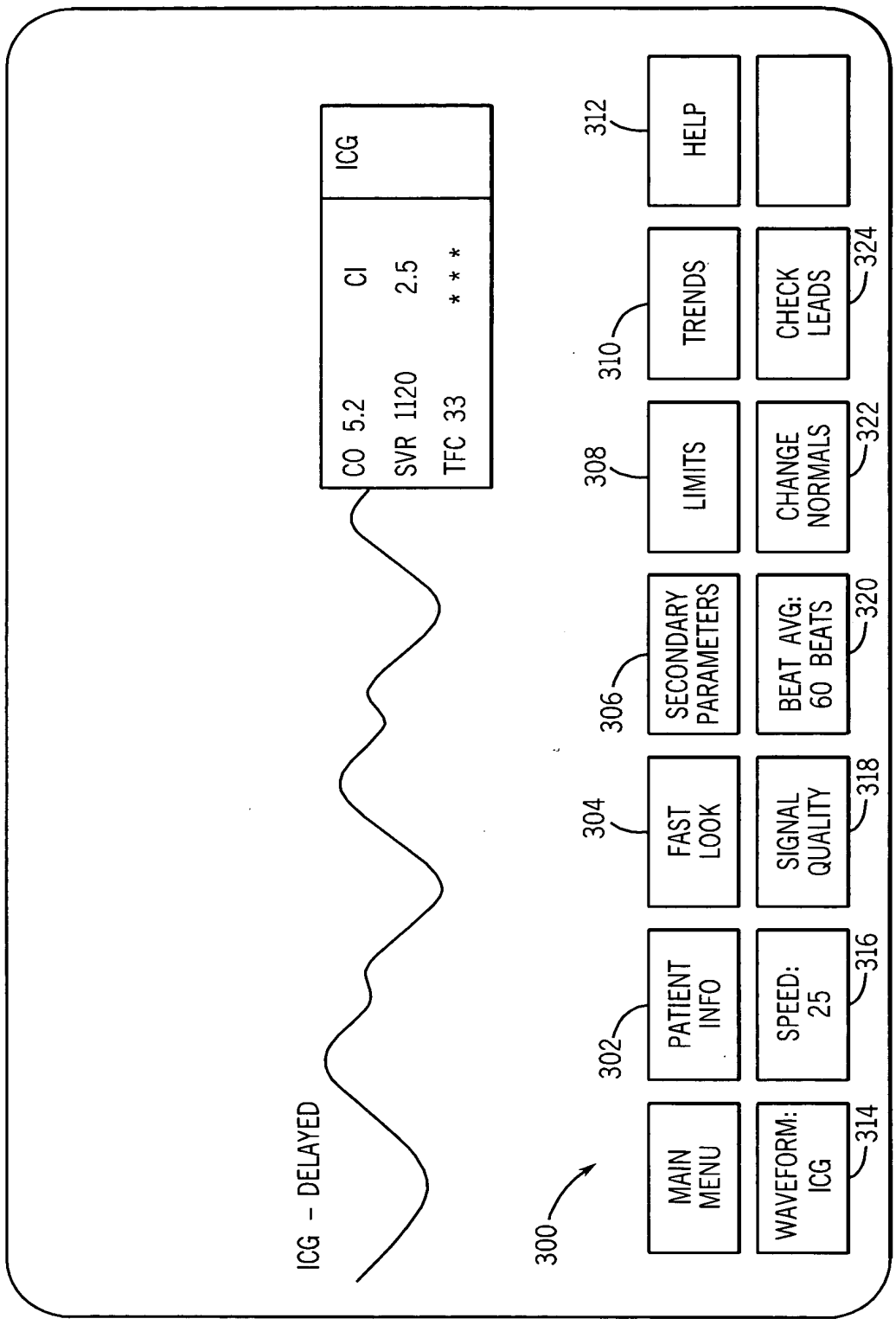

ICG
CO 5.2
CI
SVR 1120
2.5
TFC 33
* * *
ICG – DELAYED
300
MAIN MENU
PATIENT INFO
FAST LOOK
SECONDARY PARAMETERS
LIMITS
TRENDS
HELP
WAVEFORM: ICG
SPEED: 25
SIGNAL QUALITY
BEAT AVG: 60 BEATS
CHANGE NORMALS
CHECK LEADS
302
304
306
308
310
312
314
316
318
320
322
324

FIG. 4

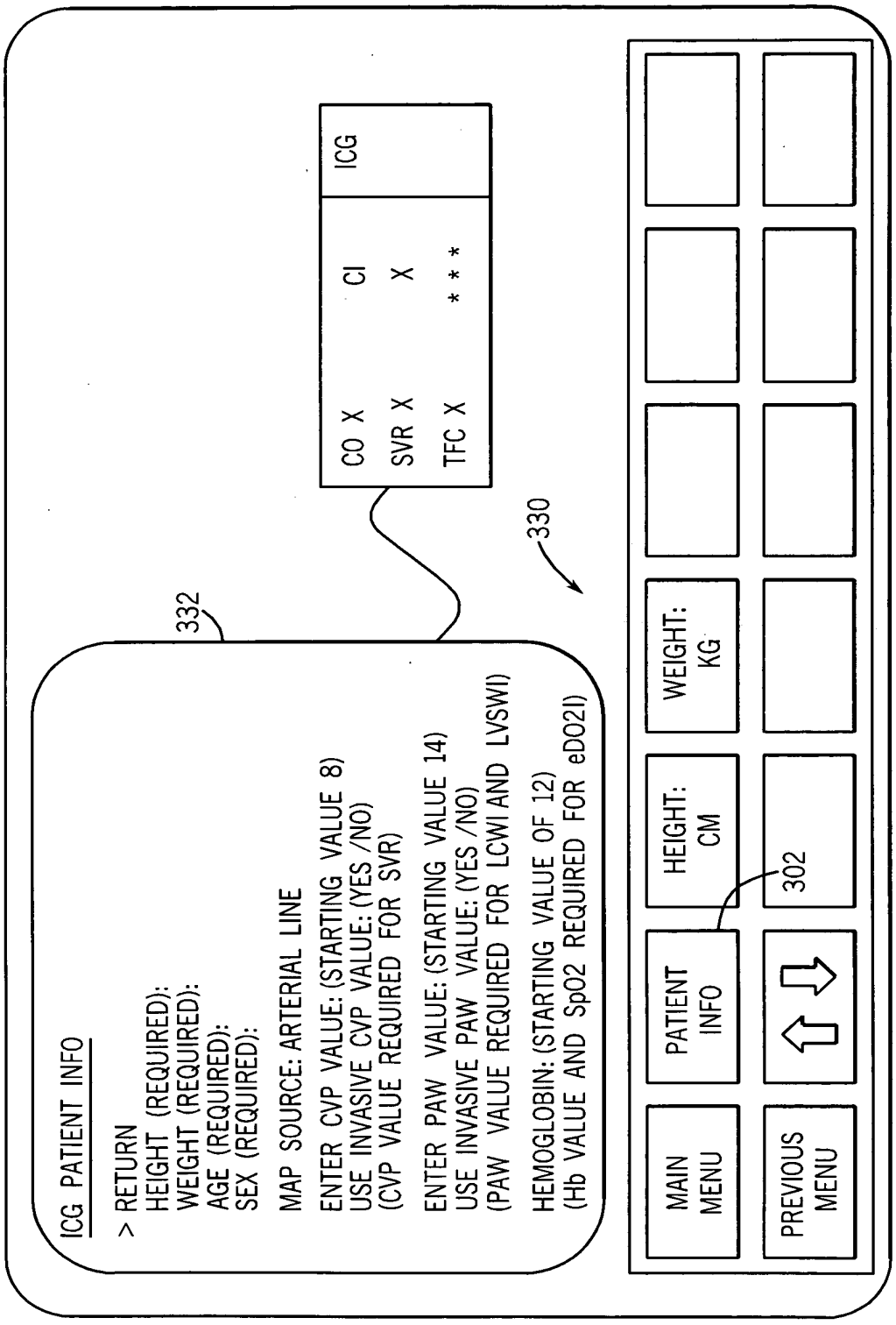

ICG PATIENT INFO
> RETURN
HEIGHT (REQUIRED):
WEIGHT (REQUIRED):
AGE (REQUIRED):
SEX (REQUIRED):
MAP SOURCE: ARTERIAL LINE
ENTER CVP VALUE: (STARTING VALUE 8)
USE INVASIVE CVP VALUE: (YES /NO)
(CVP VALUE REQUIRED FOR SVR)
ENTER PAW VALUE: (STARTING VALUE 14)
USE INVASIVE PAW VALUE: (YES /NO)
(PAW VALUE REQUIRED FOR LCWI AND LVSWI)
HEMOGLOBIN: (STARTING VALUE OF 12)
(Hb VALUE AND SpO2 REQUIRED FOR eDO2I)
332
330
CO X
SVR X
TFC X
CI
X
* * *
ICG
MAIN MENU
PREVIOUS MENU
PATIENT INFO
302
HEIGHT: CM
WEIGHT: KG

FIG. 5

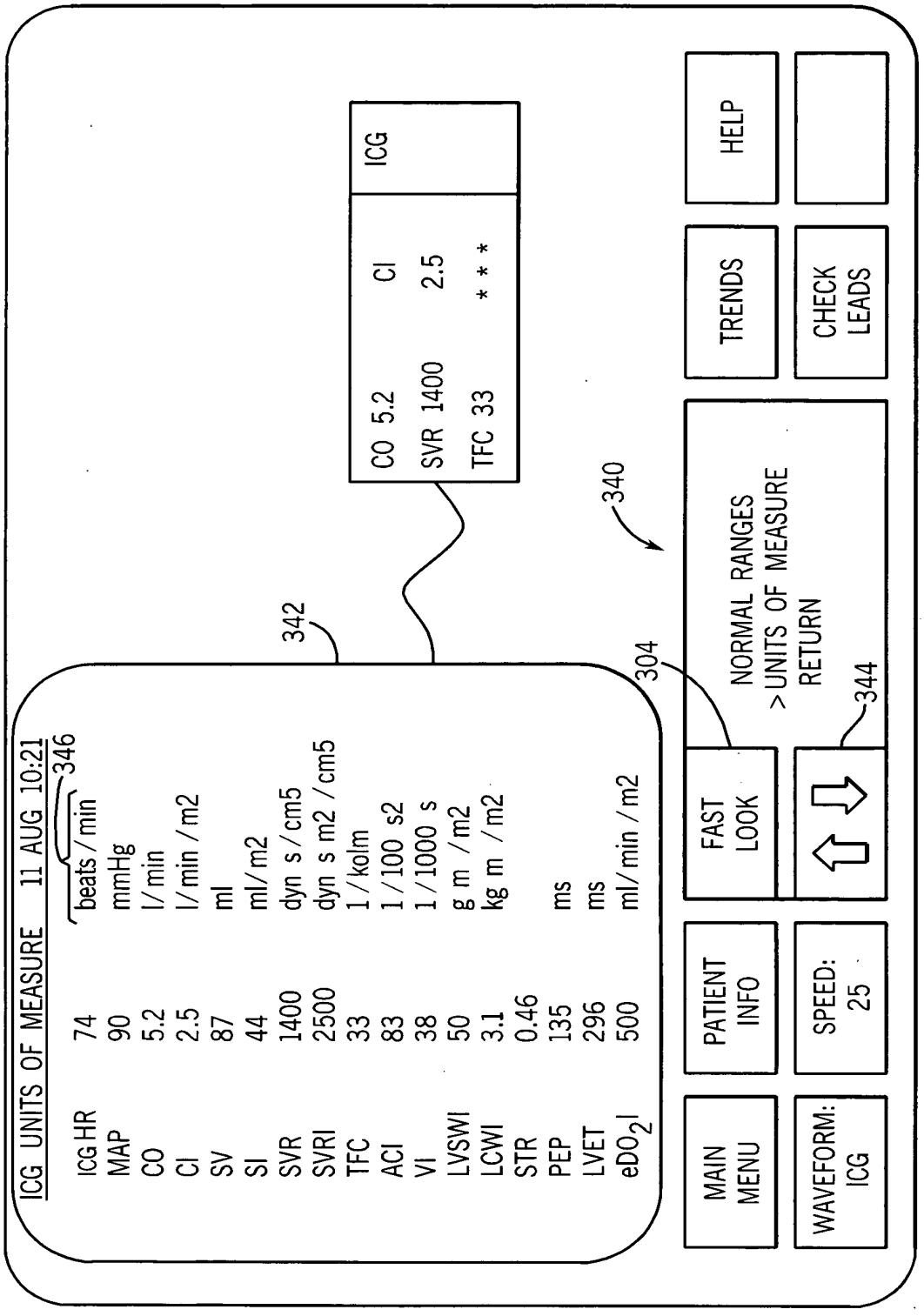

ICG UNITS OF MEASURE 11 AUG 10:21
346
ICG HR 74 beats / min
MAP 90 mmHg
CO 5.2 l / min
CI 2.5 l / min / m2
SV 87 ml
SI 44 ml / m2
SVR 1400 dyn s / cm5
SVRI 2500 dyn s m2 / cm5
TFC 33 1 / kolm
ACI 83 1 / 100 s2
VI 38 1 / 1000 s
LVSWI 50 g m / m2
LCWI 3.1 kg m / m2
STR 0.46
PEP 135 ms
LVET 296 ms
eDO2I 500 ml / min / m2
342
ICG
CO 5.2 CI
SVR 1400 2.5
TFC 33 * * *
340
304
NORMAL RANGES
> UNITS OF MEASURE
RETURN
344
HELP
TRENDS
CHECK LEADS
MAIN MENU
PATIENT INFO
FAST LOOK
WAVEFORM: ICG
SPEED: 25

FIG. 6

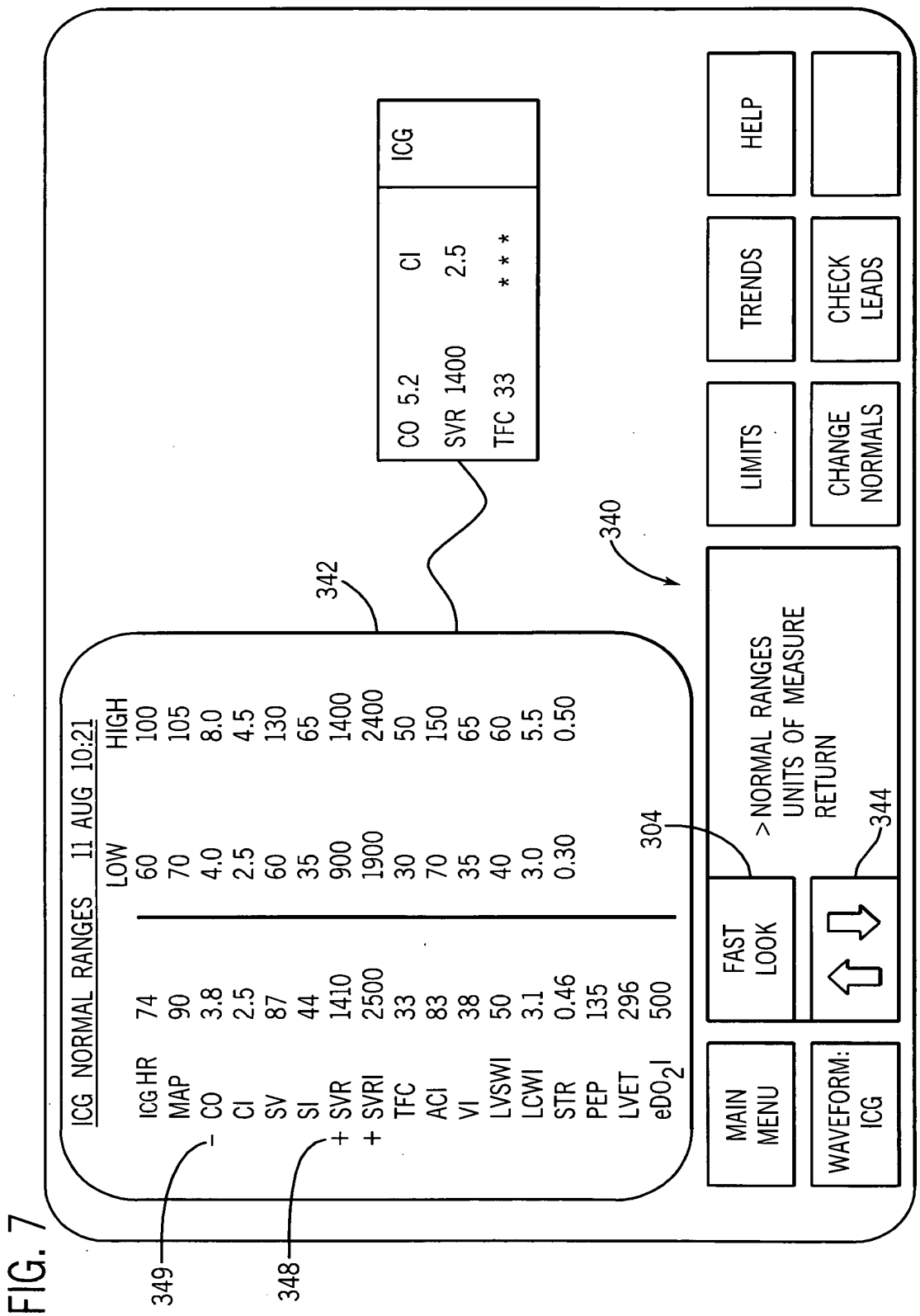

ICG NORMAL RANGES 11 AUG 10:21
LOW HIGH
ICG HR 74 60 100
MAP 90 70 105
- CO 3.8 4.0 8.0
CI 2.5 2.5 4.5
SV 87 60 130
SI 44 35 65
+ SVR 1410 900 1400
+ SVRI 2500 1900 2400
TFC 33 30 50
ACI 83 70 150
VI 38 35 65
LVSWI 50 40 60
LCWI 3.1 3.0 5.5
STR 0.46 0.30 0.50
PEP 135
LVET 296
eDO2I 500
ICG
CO 5.2 CI
SVR 1400 2.5
TFC 33 * * *
342
340
304
344
349
348
MAIN MENU
WAVEFORM: ICG
FAST LOOK
> NORMAL RANGES
UNITS OF MEASURE
RETURN
LIMITS
CHANGE NORMALS
TRENDS
CHECK LEADS
HELP

FIG. 7

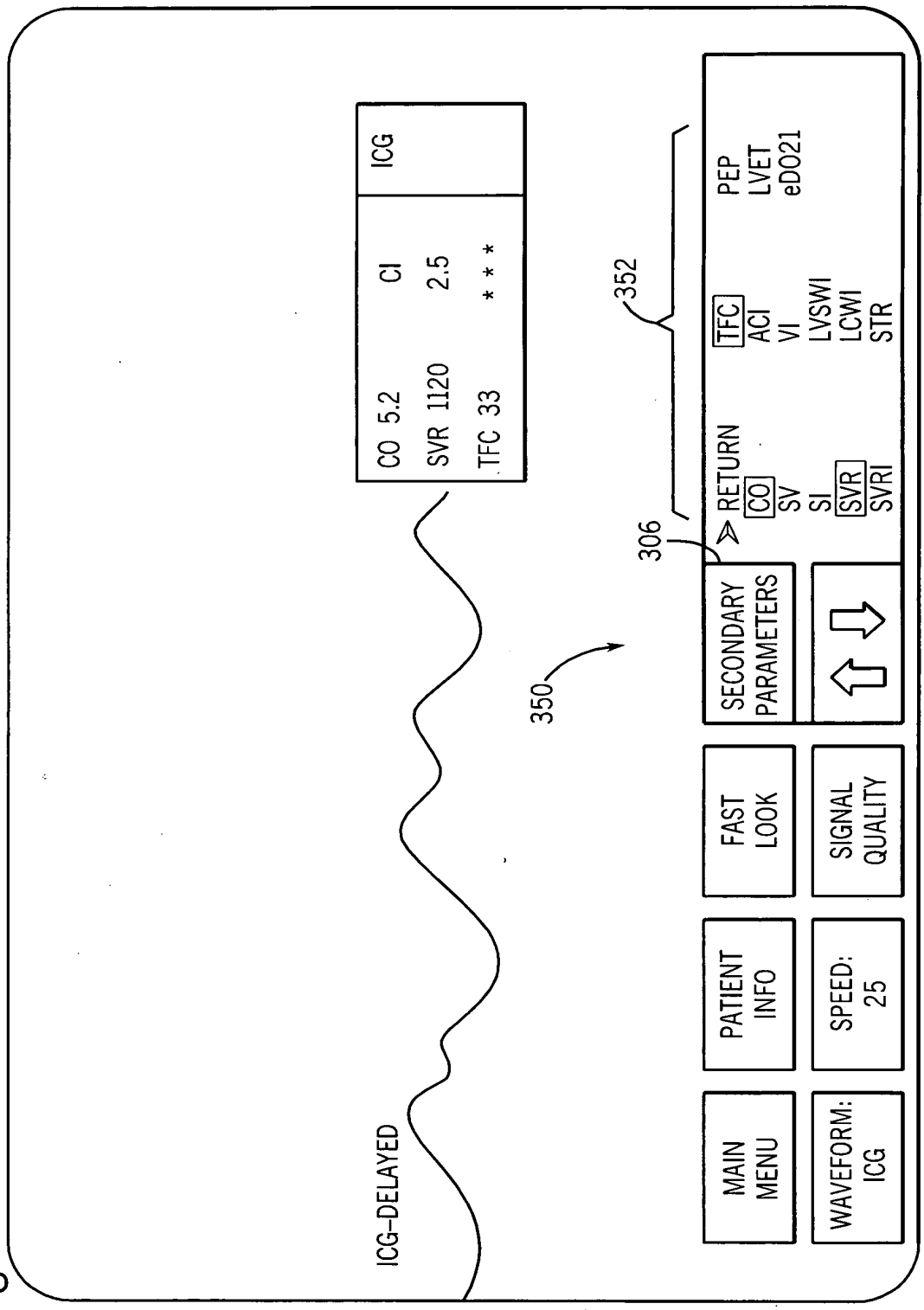

ICG
CO 5.2
CI
2.5
SVR 1120
TFC 33
* * *
352
306
350
RETURN
CO
SV
SI
SVR
SVRI
TFC
ACI
VI
LVSWI
LCWI
STR
PEP
LVET
eDO21
ICG-DELAYED
MAIN MENU
WAVEFORM: ICG
PATIENT INFO
SPEED: 25
FAST LOOK
SIGNAL QUALITY
SECONDARY PARAMETERS

FIG. 8

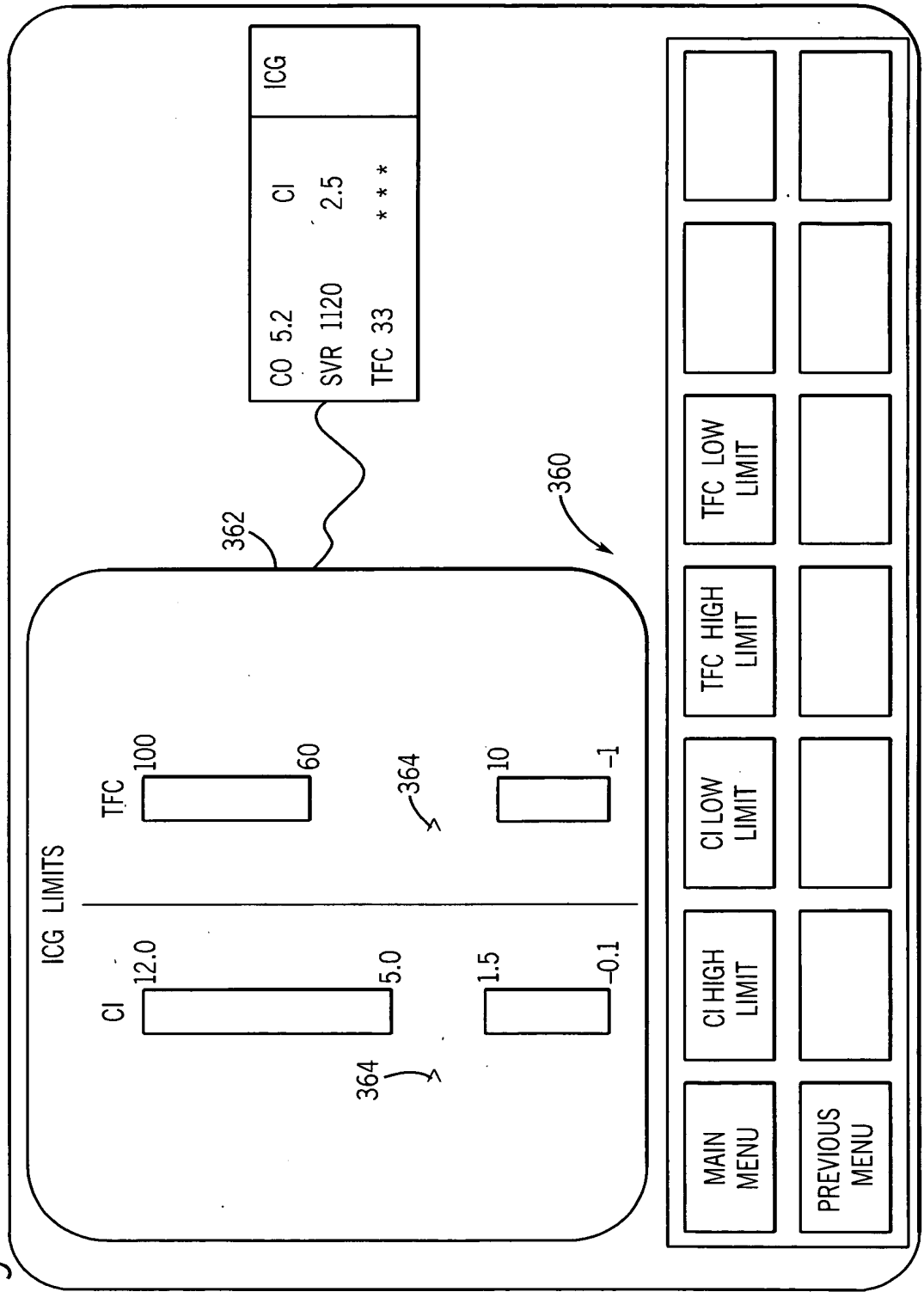

ICG
CO 5.2
CI 2.5
SVR 1120
TFC 33
* * *
362
360
ICG LIMITS
TFC
100
60
364
10
-1
CI
12.0
5.0
1.5
-0.1
364
MAIN MENU
PREVIOUS MENU
CI HIGH LIMIT
CI LOW LIMIT
TFC HIGH LIMIT
TFC LOW LIMIT

FIG. 9

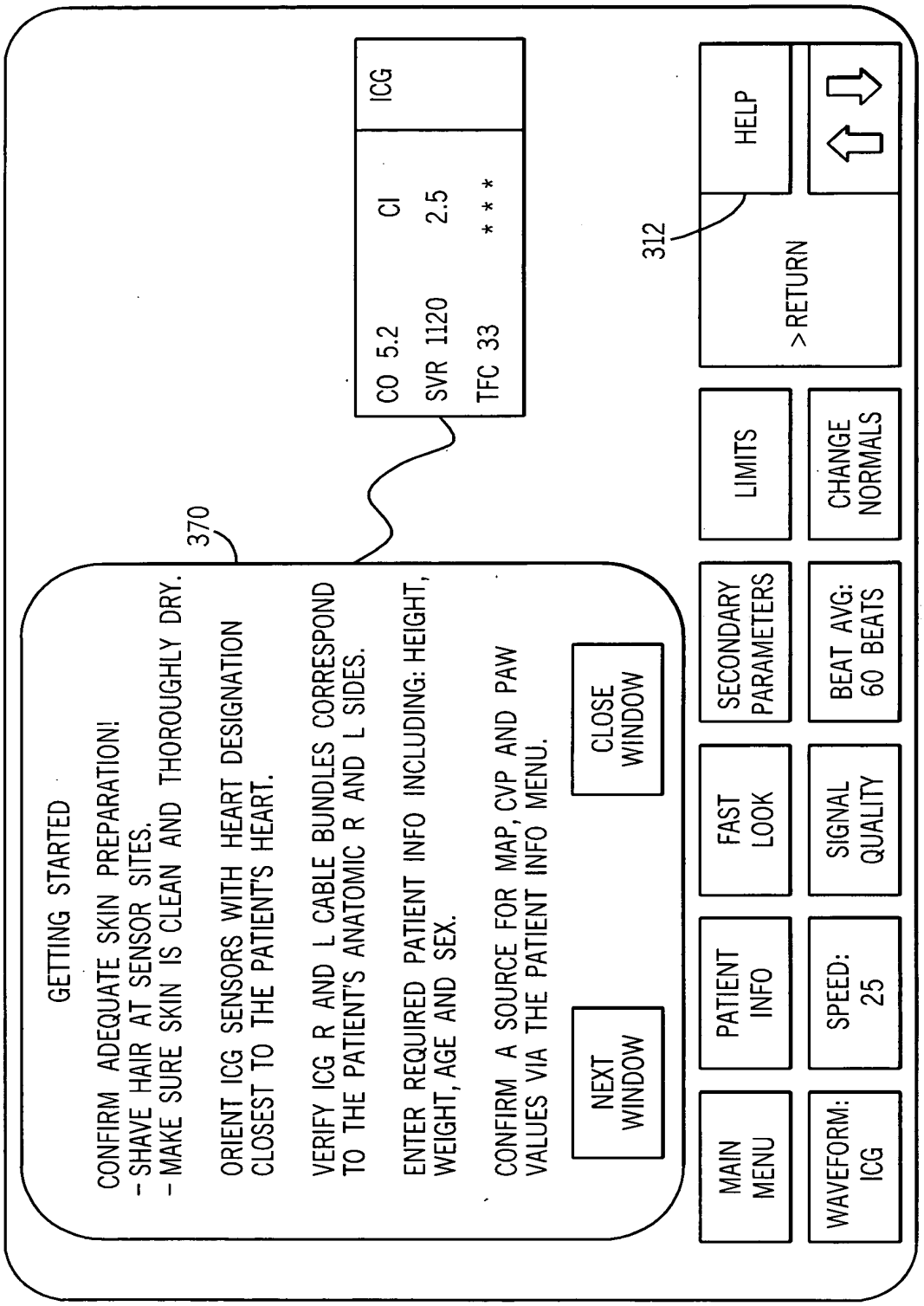

GETTING STARTED
CONFIRM ADEQUATE SKIN PREPARATION!
- SHAVE HAIR AT SENSOR SITES.
- MAKE SURE SKIN IS CLEAN AND THOROUGHLY DRY.
ORIENT ICG SENSORS WITH HEART DESIGNATION CLOSEST TO THE PATIENT'S HEART.
VERIFY ICG R AND L CABLE BUNDLES CORRESPOND TO THE PATIENT'S ANATOMIC R AND L SIDES.
ENTER REQUIRED PATIENT INFO INCLUDING: HEIGHT, WEIGHT, AGE AND SEX.
CONFIRM A SOURCE FOR MAP, CVP AND PAW VALUES VIA THE PATIENT INFO MENU.
NEXT WINDOW
CLOSE WINDOW
370
ICG
CO 5.2 CI
SVR 1120 2.5
TFC 33 * * *
312
HELP
> RETURN
LIMITS
CHANGE NORMALS
SECONDARY PARAMETERS
BEAT AVG: 60 BEATS
FAST LOOK
SIGNAL QUALITY
PATIENT INFO
SPEED: 25
MAIN MENU
WAVEFORM: ICG

FIG. 10

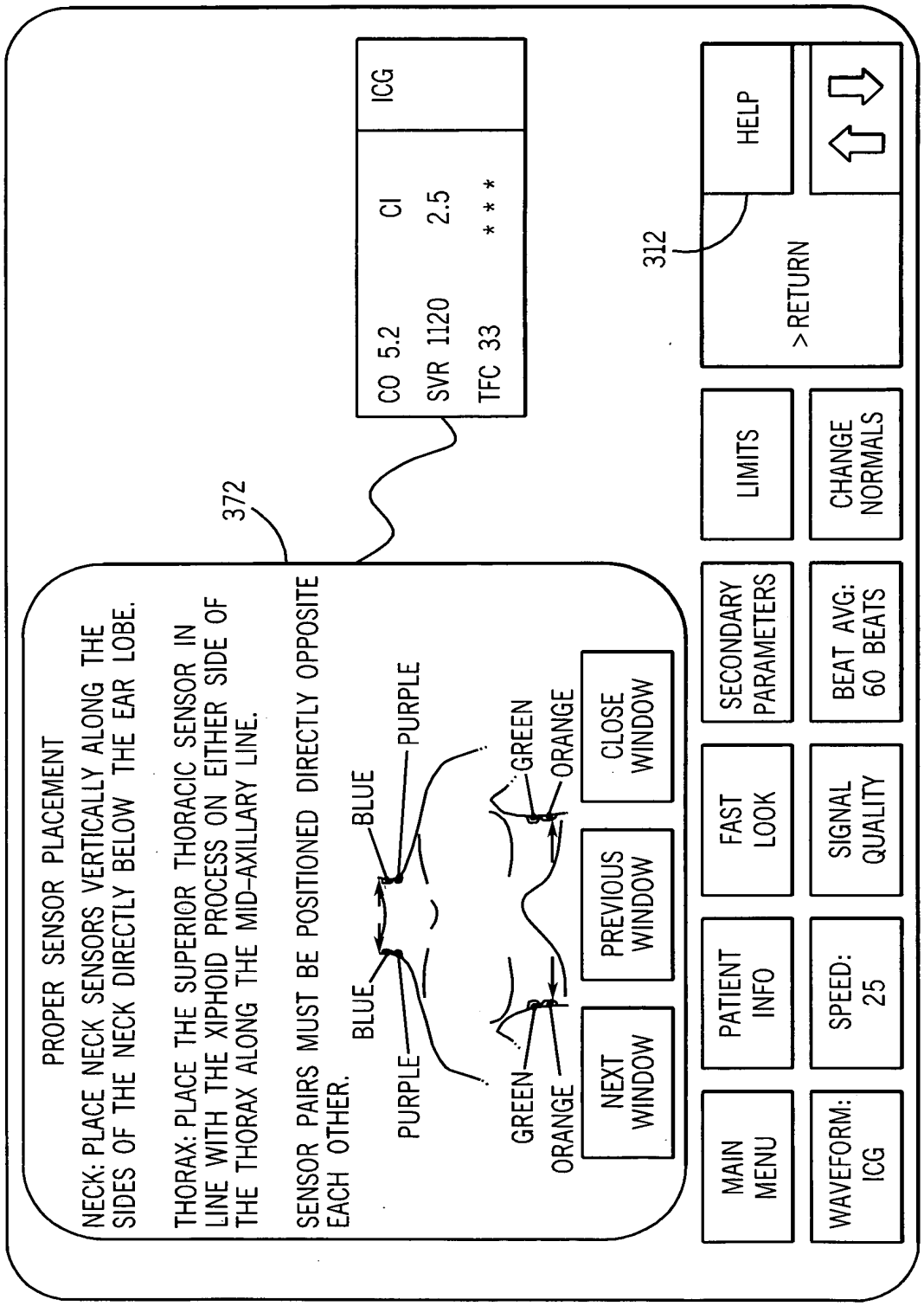


FIG. 11

Doc21-154204.1

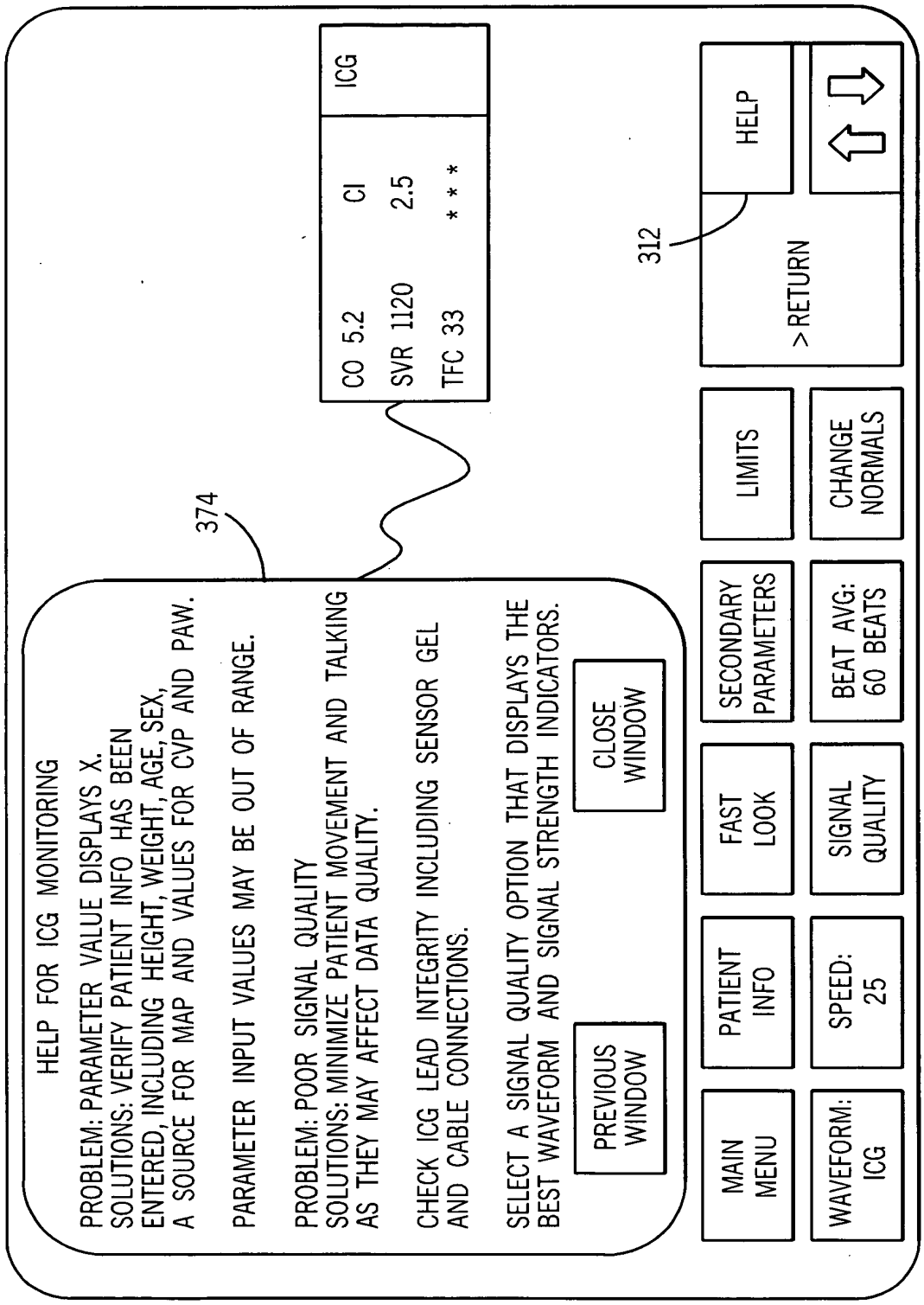

HELP FOR ICG MONITORING
PROBLEM: PARAMETER VALUE DISPLAYS X.
SOLUTIONS: VERIFY PATIENT INFO HAS BEEN ENTERED, INCLUDING HEIGHT, WEIGHT, AGE, SEX, A SOURCE FOR MAP AND VALUES FOR CVP AND PAW.
PARAMETER INPUT VALUES MAY BE OUT OF RANGE.
PROBLEM: POOR SIGNAL QUALITY
SOLUTIONS: MINIMIZE PATIENT MOVEMENT AND TALKING AS THEY MAY AFFECT DATA QUALITY.
CHECK ICG LEAD INTEGRITY INCLUDING SENSOR GEL AND CABLE CONNECTIONS.
SELECT A SIGNAL QUALITY OPTION THAT DISPLAYS THE BEST WAVEFORM AND SIGNAL STRENGTH INDICATORS.
PREVIOUS WINDOW
CLOSE WINDOW
374
ICG
CO 5.2
CI
SVR 1120
2.5
TFC 33
* * *
312
HELP
>RETURN
LIMITS
CHANGE NORMALS
SECONDARY PARAMETERS
BEAT AVG: 60 BEATS
FAST LOOK
SIGNAL QUALITY
MAIN MENU
PATIENT INFO
SPEED: 25
WAVEFORM: ICG

FIG. 12

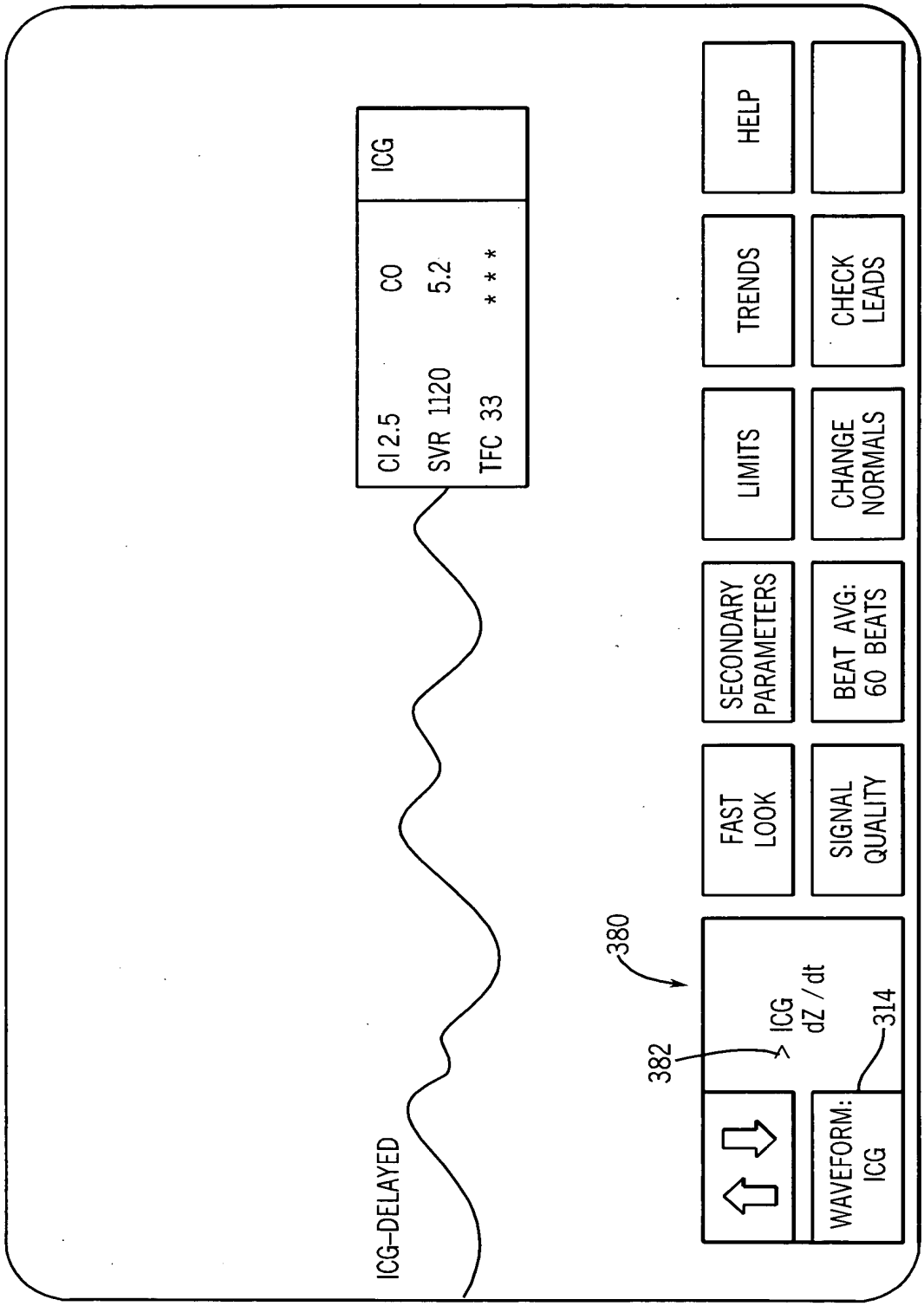


FIG. 13

Docket #070191-0335

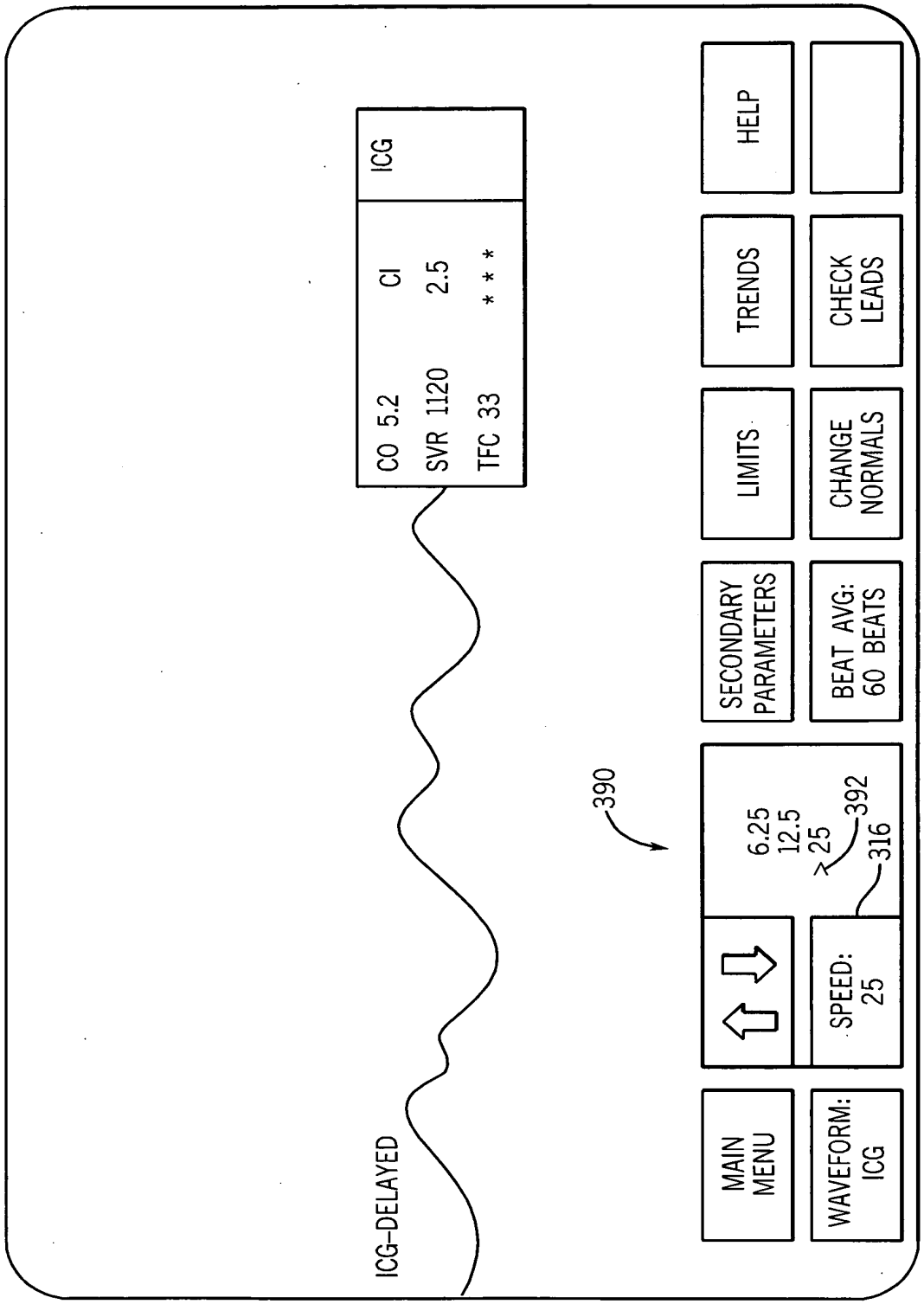


FIG. 14

Docket No. 070191-0335 (112018)

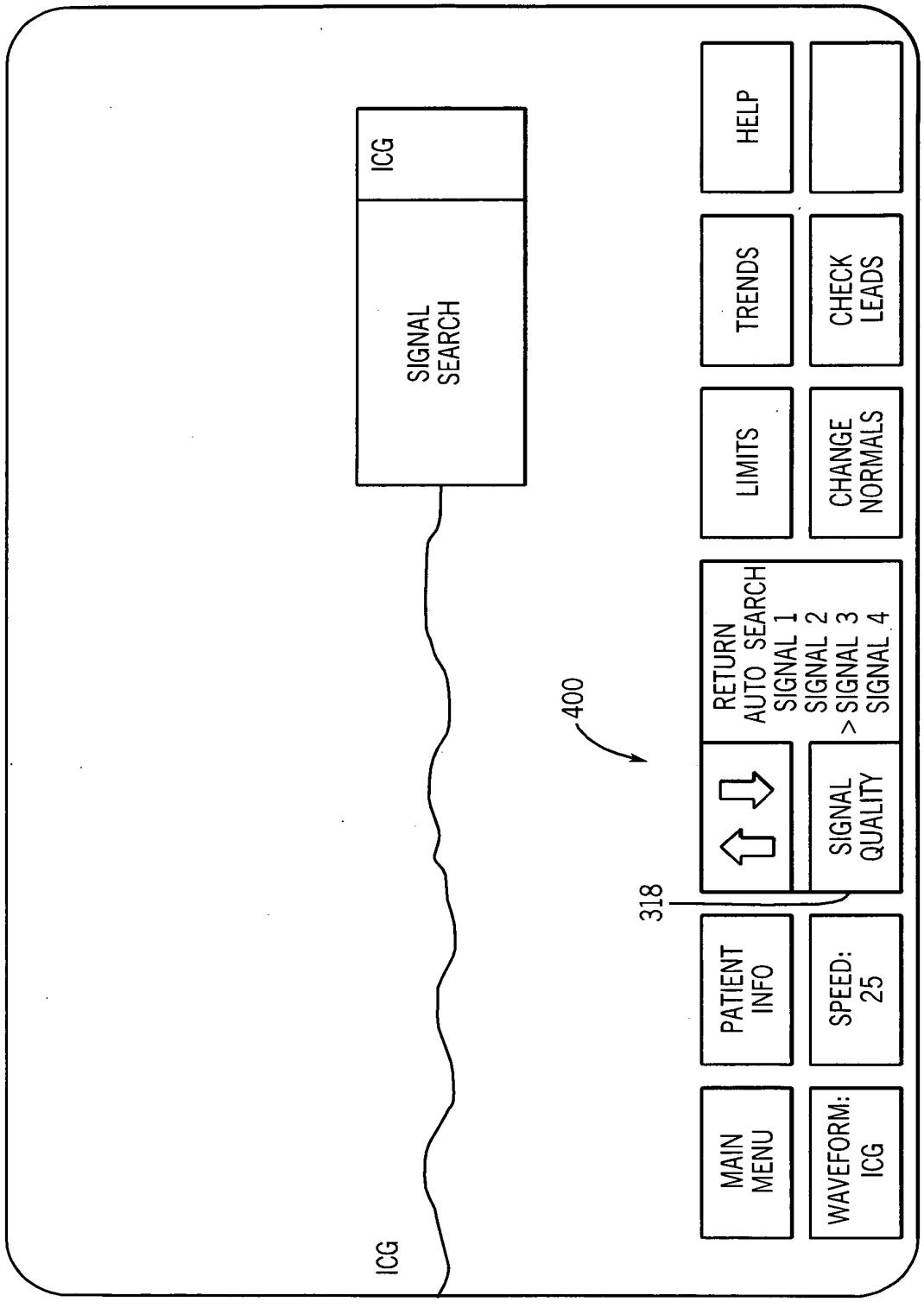


FIG. 15

Patent Application Publication

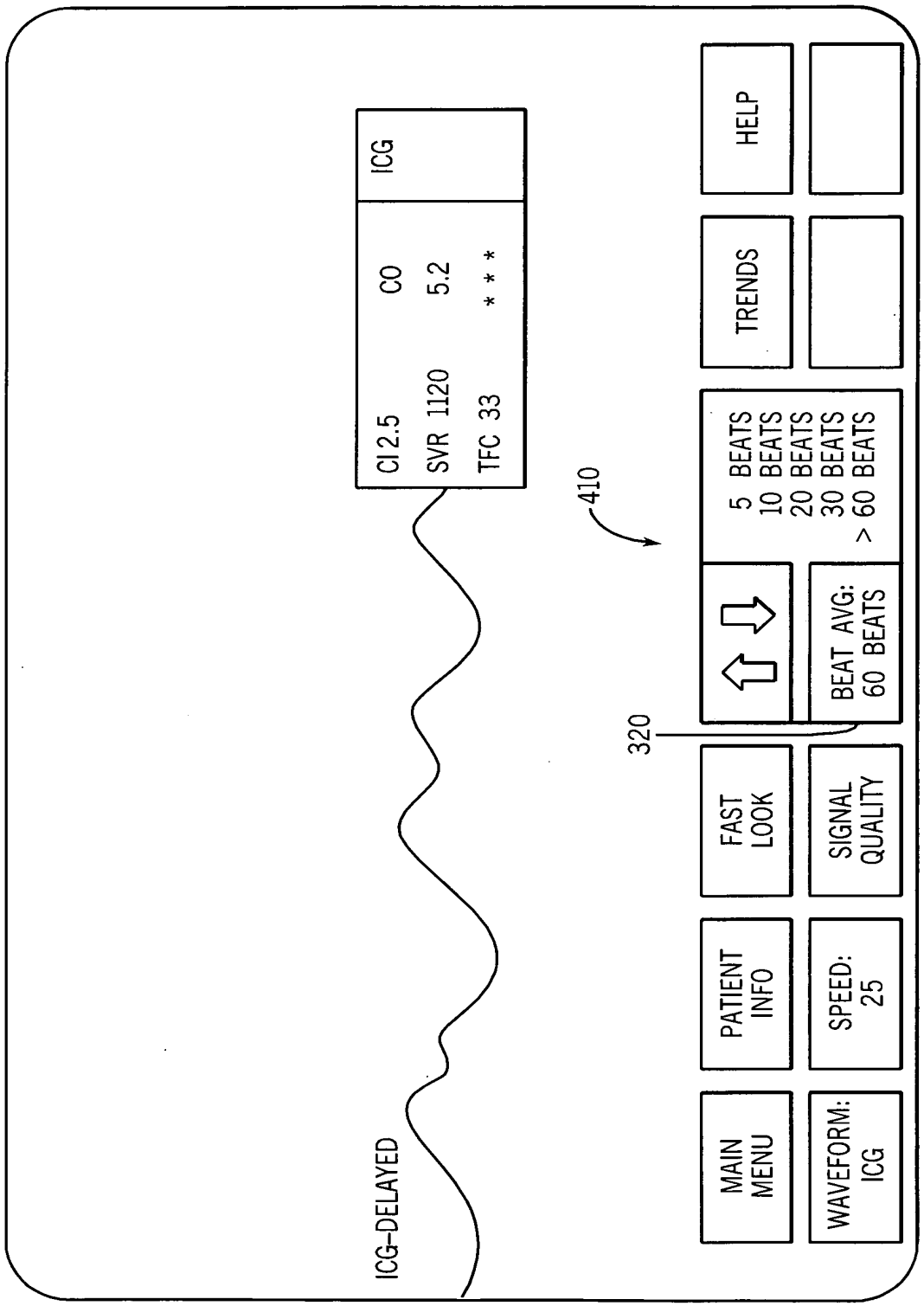


FIG. 16

Patent Search

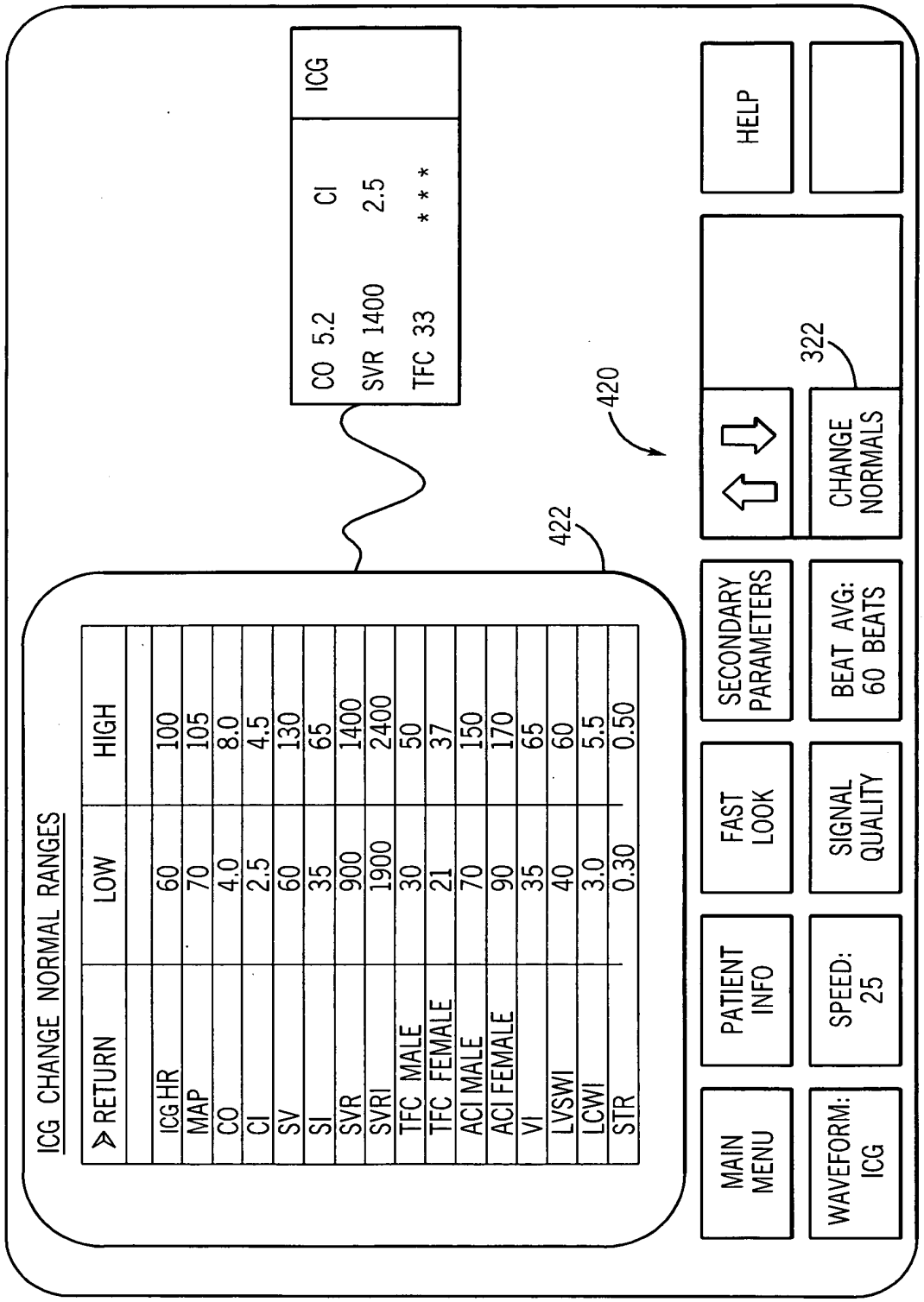

ICG CHANGE NORMAL RANGES
RETURN
LOW
HIGH
ICG HR 60 100
MAP 70 105
CO 4.0 8.0
CI 2.5 4.5
SV 60 130
SI 35 65
SVR 900 1400
SVRI 1900 2400
TFC MALE 30 50
TFC FEMALE 21 37
ACI MALE 70 150
ACI FEMALE 90 170
VI 35 65
LVSWI 40 60
LCWI 3.0 5.5
STR 0.30 0.50
CO 5.2 CI
SVR 1400 2.5
TFC 33 * * *
ICG
422
420
322
HELP
CHANGE NORMALS
SECONDARY PARAMETERS
BEAT AVG: 60 BEATS
FAST LOOK
SIGNAL QUALITY
PATIENT INFO
SPEED: 25
MAIN MENU
WAVEFORM: ICG

FIG. 17

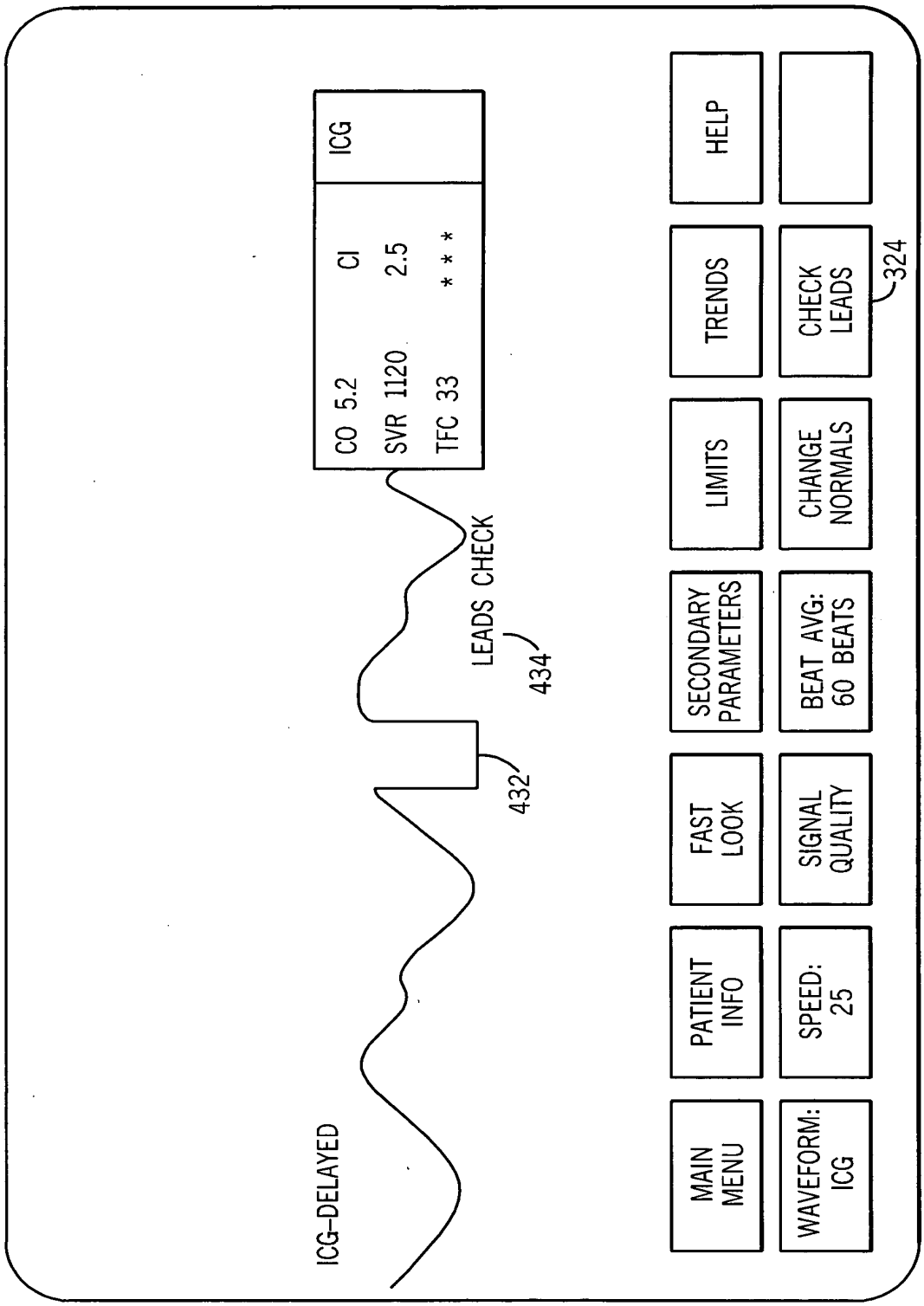


FIG. 18

Patent Application Publication

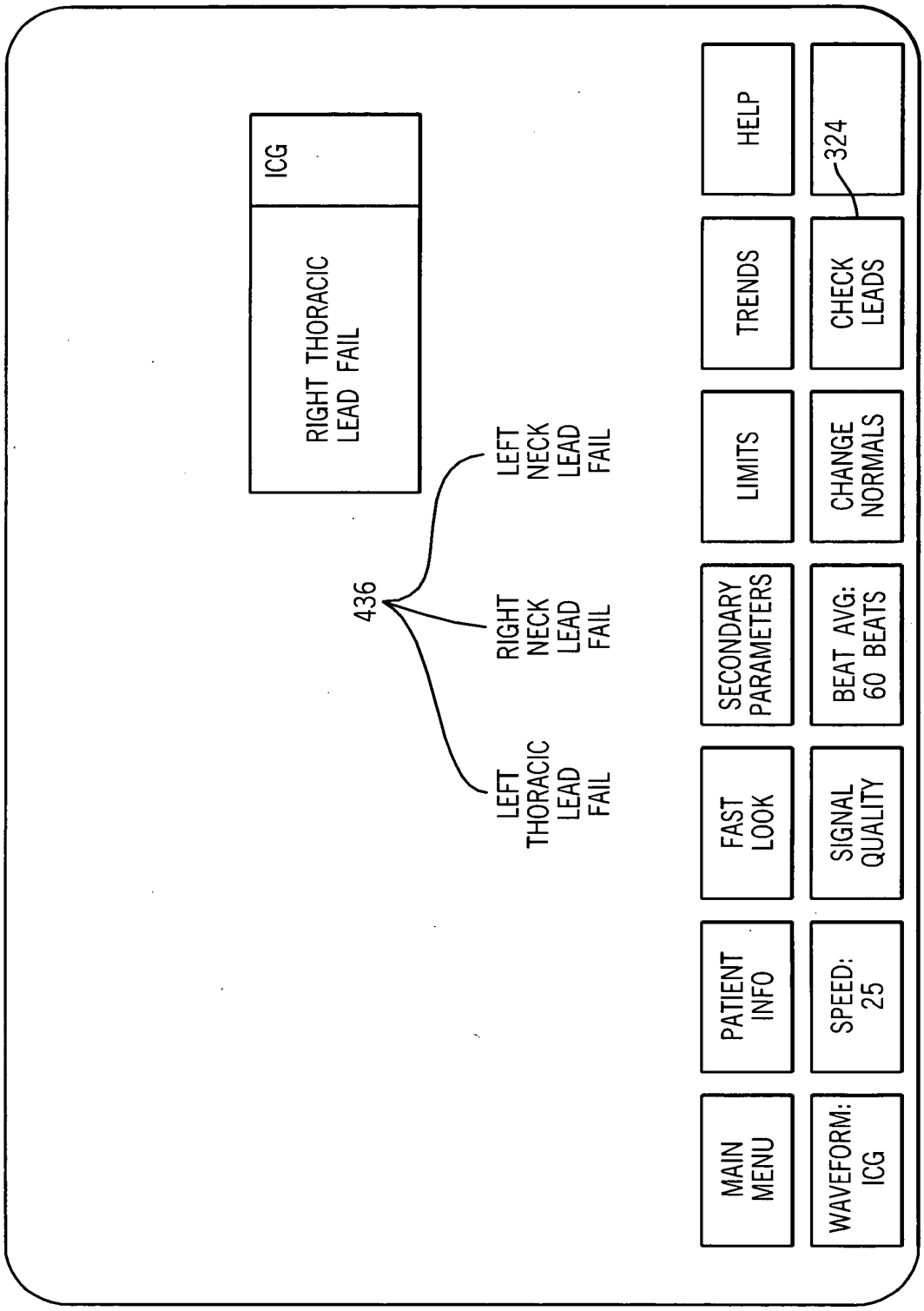


FIG. 19

Docket: 070191-0335

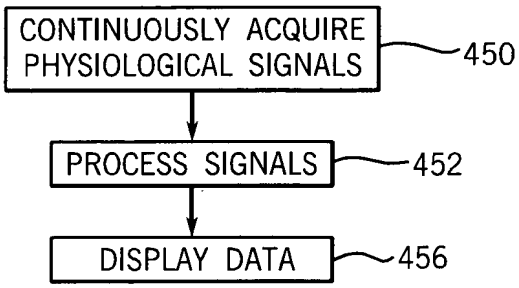


FIG. 20A

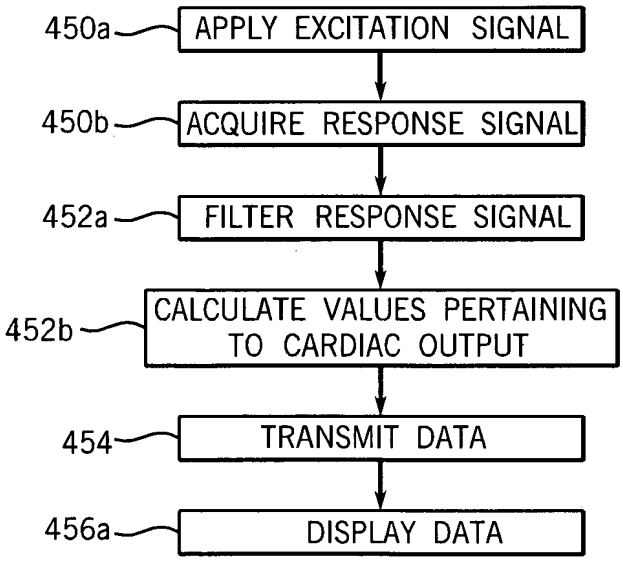


FIG. 20B

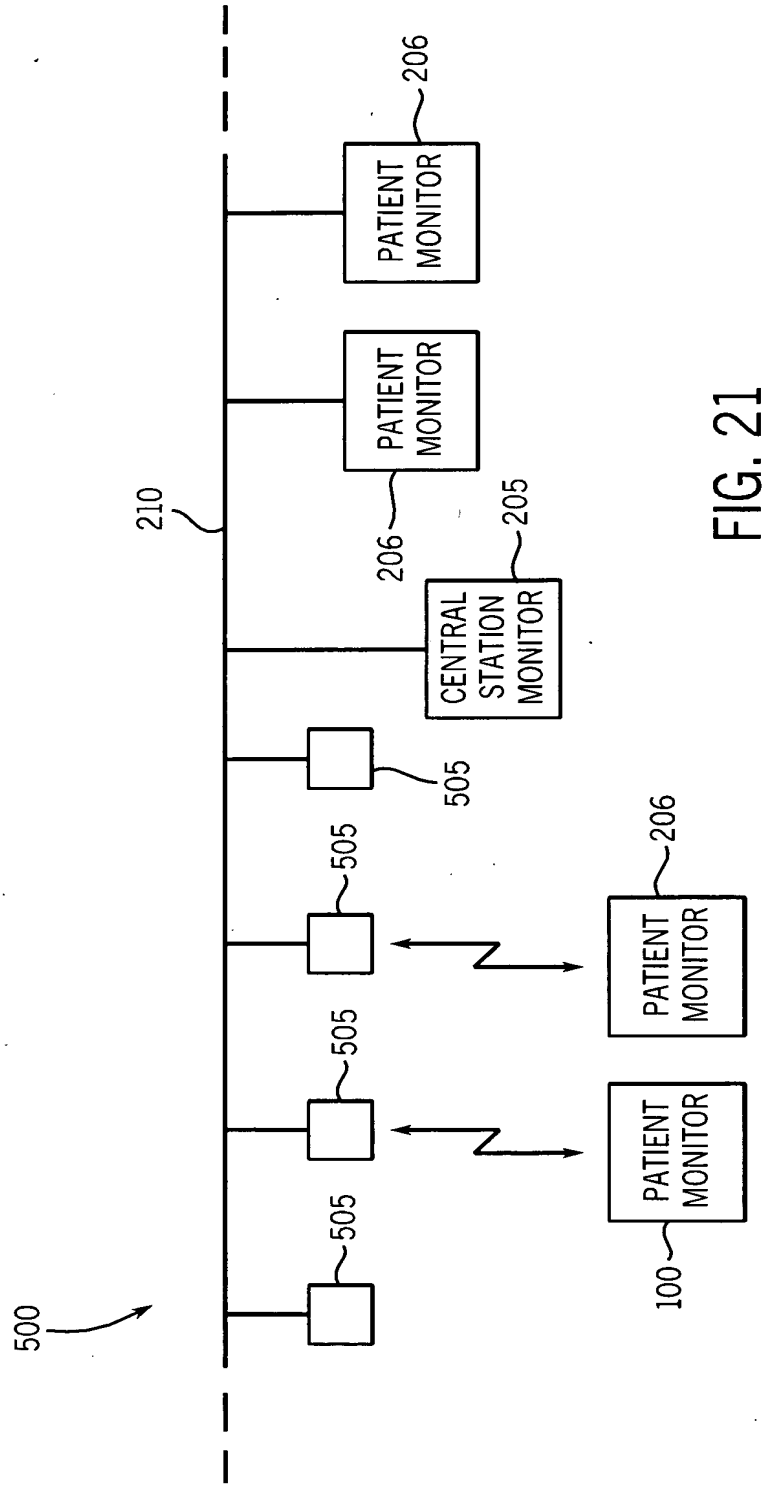

500
210
PATIENT MONITOR
206
PATIENT MONITOR
206
CENTRAL STATION MONITOR
205
505
505
505
505
PATIENT MONITOR
206
PATIENT MONITOR
100

FIG. 21